

Americans Are Picking Japanese Brains

By NICHOLAS D. KRISTOF

AFTER decades of pooh-pooing Japanese scientific research, American business executives no longer patronize the Japanese as "imitators" and "copiers" of American technology. Quite the contrary. In the wake of Japan's drive for technological supremacy, they are scrambling to keep up with the new scientific research in Japan.

It is not an easy task. As Japan finally moves from imitation to innovation—and becomes a formidable competitor in crucial areas such as supercomputers, biotechnology and robotics—American scientists find themselves hard-pressed to learn of Japanese breakthroughs. So in the past year or so, a small industry has been emerging, consisting of companies that help monitor Japanese technology and, in effect, broker developments to American corporations.

"What's at stake may well be the competitiveness of American industry," said Richard J. Samuels, who directs a program on Japanese science at the Massachusetts Institute of Technology. "If you can't pay attention to and assimilate technological information beyond your borders, you're playing the game with one arm tied behind your back."

The new technology brokers are trying to address the problem by translating and indexing Japanese scientific articles. For example, the Japanese Technical Information Service, a Xerox subsidiary, is starting up operations near Philadelphia this fall. (See box inside.) Nissho Iwai, the Japanese trading company, already has done something similar. A year ago, it began publishing Techgram Japan, a magazine full of brief summaries of Japanese technological developments. Here are some recent examples:

- A new "killer yeast" that destroys harmful bacteria while fermenting beer.
- A machine, run by a microcomputer, that manufactures "riceburgers," a Japanese food consisting of ground meat inside a ball of rice.
- A machine that reads aloud from Japanese paperbacks (but takes 25 minutes a page).

So far there are few success stories of American companies successfully adopting Japanese technologies, partly because by the time an invention is practical it is often cheaper to manufacture it in Japan than in the United States. One exception, however, is a missile tracking guidance system developed in part by Toshiba. In June it became the first Japanese military technology officially requested by the United States, which over the years has passed on a great deal of military technology to Japan.

Many scientists say that the new American ef-

fort to get at the stream of Japanese research information is too little and too late. Even with the latest undertakings, the vast majority of the 10,000 technical journals published in Japan will be neither indexed nor abstracted in the West. And while the number is rising, only about 400 science students at universities around the country are studying the Japanese language.

"There's a certain hard-to-define intellectual arrogance that everything on the cutting edge is done here," said Adm. Bobby R. Inman, the former deputy director of the Central Intelligence Agency who now heads the Microelectronics and Computer Technology Corporation, a research consortium. "That's been true in the past, but I detect a smugness setting in."

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